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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/660,410	09/10/2003	Erik Lier	040092-020110US	5827

31824 7590 07/29/2005

MCDERMOTT WILL & EMERY LLP
18191 VON KARMAN AVE.
SUITE 400
IRVINE, CA 92612-7107

EXAMINER

MULL, FRED H

ART UNIT	PAPER NUMBER
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3662

DATE MAILED: 07/29/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary	Application No. 10/660,410	Applicant(s) LIER ET AL.	
	Examiner Fred H. Mull	Art Unit 3662	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 June 2005.
 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) _____ is/are pending in the application.
 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
 5) ☐ Claim(s) _____ is/are allowed.
 6) ☒ Claim(s) 1 and 3-5 is/are rejected.
 7) ☐ Claim(s) 2,6-10,12-37,39-53 is/are objected to.
 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
 10) ☒ The drawing(s) filed on 12 January 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☐ All b) ☐ Some * c) ☐ None of:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
 * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>06/06/2005</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. Applicant's arguments on p. 12, with regard to various objection(s), have been fully considered and are persuasive. The objections have been withdrawn.
2. Applicant's arguments on p. 13, with respect to the rejection(s) over Ashe, Hirschfield, Gehy, and Gottl have been fully considered and are persuasive. The rejection(s) of these claims have been withdrawn.
3. Applicant's arguments on p. 13, with respect to the rejection(s) of claims 1-3 and 5 over Miller have been fully considered but they are not persuasive.

Applicant argues that since previous claim 11 was indicated as being allowable, claims 1-3 and 5 are allowable since the subject matter of previous claim 11 has been incorporated into claim 1. However, amended claim 1 does not contain all the limitations of previous claim 11, since these include all the limitations of parent claim 6.

Claim Objections

4. Claims 1, 6, and 33 are objected to because of the following informalities:
In the final line of each of the claims, "between" should be changed to --among--.
Appropriate correction is required.

Claim Rejections - 35 USC § 102

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

§ 1 Claims 1 and 3-5 are rejected under 35 U.S.C. 102(b) as being anticipated by Miller.

In regard to claim 1, Miller discloses a plurality of antenna elements (A_1 - A_N , Fig. 1); and an antenna beamforming system (12); a calibration system (col. 8, line 46 to col. 9, line 17) adapted to calibrate the antenna array in either a transmit mode or a receive mode (col. 10, lines 21-27), the calibration system comprising: a plurality of calibration probes (A_1 , A_{10} , A_{N-8}) interleaved with the plurality of antenna elements (Figs. 1 and 2), the calibration probes adapted to be transmit calibration probes or receive calibration probes (col. 10, lines 21-27); a calibration processing system adapted to calibrate the antenna array utilizing the interleaved calibration probes (col. 14, lines 24-28); and a switch for switching among the plurality of calibration probes (col. 9, lines 8-17).

In regard to claim 3, Miller further discloses the antenna beamforming system is adapted to generate one or more beams, and wherein the beamforming system comprises an RF signal path to each element of the antenna array for each of the one or more beams and wherein the calibration system is adapted to calibrate each of the RF signal paths (Fig. 1; col. 9, lines 17-47).

In regard to claim 4, Miller further discloses each signal path comprises a phase shifter, and wherein the calibration system calibrates the phase shifters (col. 9, lines 27-32).

In regard to claim 5, Miller further discloses each signal path comprises an attenuator, and wherein the calibration system calibrates the attenuators (col. 9, lines 27-32).

Allowable Subject Matter

6. Claim(s) 6-10, 12-19, 22-26, 33-37, 39-46, and 49-53 would be allowable if rewritten to overcome the objection(s) set forth in this Office action.
7. Claim(s) 2 would be allowable if rewritten to overcome the objection(s) set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

Conclusion

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

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the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Fred H. Mull whose telephone number is 571-272-6975. The examiner can normally be reached on M-F 9:00 - 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas H. Tarcza can be reached on 571-272-6979. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

fhm

Fred H. Mull
Examiner
Art Unit 3662



THOMAS H. TARCZA
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 3600